RESEARCH PROPOSAL

TRENDS OF URBANISATION IN KOTA CITY AND ITS FEASIBILITY AS A COUNTER MAGNET TO NCR

For Registration to the Degree of Doctor of Philosophy

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Submitted by:

Vrinda Prakash
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Under the Supervision of

Dr. Harshita Upadhyaya
HEAD, Assistant Professor
Department of Geography

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I. INTRODUCTION

Urbanization is a process of urban growth by natural increase in population or migration from rural to urban areas. It refers to a growth in the percentage of a population living in urban areas and the further physical expansion of already existing urban centres. It also denotes expansion of urban land uses and spatial concentration of people working in non-agricultural activities. World's urban population stands above 54% (2014), up from 30% in 1950. It is projected to reach 66% in 2050 (Report from United Nations, 2014). The degree or level of urbanization is typically expressed as the percentage of population residing in urban areas, defined according to criteria used by national governments for distinguishing between urban and rural areas (World Urbanisation Prospects, 2018). In practice, urbanization refers both to the increase in the percentage of population residing in urban areas and to the associated growth in the number of urban dwellers, in the size of cities and in the total area occupied by urban settlements. It may be noted that the Indian economy has grown from about 6% per annum during the 1990s to about 8% during the first decade of the 2000s (Ahluwalia 2011). This clearly reflects the power of economic growth in bringing about faster urbanisation during 2001-2011. Census of India 2011 defines urban area as,

I. All places with a municipality, municipal corporation, cantonment board or notified town area committee etc.

II. All other places, which satisfy the following criteria,

a. Minimum population of 5000.
b. At least 75 per cent of male working population engaged in non agricultural activities and
c. a density of population of at least 400 persons per sq km

Trends of Urbanization:

The realization of trends and patterns of urbanization plays a significant role in understanding the changes in the process of urbanization over a period of time and in identifying characteristics with respect to urbanization that may be similar or dissimilar over space and time. Last few centuries witnessed very rapid growth of urban population on the world scenario. The rate of growth of urban population is closely linked up with improved agricultural technique, industrialization and increased volume of trade. Urbanization has been regarded as an index of the level of socioeconomic development of a country; hence, the study of urbanization assumes importance in the population studies. Due to this importance, the study of trends of urbanization in the study area is presented in this research work as well.

Counter Magnet Area

The National Capital Region Planning Board Act 1985 empowers the Board under clause (f) of Section 8, to select in consultation with the State Government concerned any urban area outside the National capital Region having regard to its location, population and potential for growth which

may be developed in order to achieve the objectives of the Regional Plan. Conceptually Counter Magnet Area's to National Capital Region, as envisaged in regional plan-2001 and 2021, are to be such urban areas as may be located sufficiently away from NCR and should have their own established roots and inherent potentials to function as viable independent growth foci. Such identified counter magnets would have the attributes of physical, social, and economic viability, and have the quality of physical linkages in the form of transportation and communication facilities.

Regional Plan for 2001 and 2021 assigned two distinctive and mutually complementary roles in the context of NCR:

(i) As interceptors of migratory flows into NCR, which may escalate, as the accelerated development of NCR would provide a pull to migrants from the less developed adjoining areas.

(ii) As regional growth centres in the region of their setting, which would help to achieve a balanced pattern of urbanization over a period of time.

Regional Plan-2001 for NCR also proposed policy guidelines for the development of the Counter-Magnet Areas which were restated in the Regional Plan-2021 for NCR. It was proposed that the respective State Governments/implementing agencies would prepare an integrated development programme for the Counter-Magnet Areas for strengthening of their economic base and upgrade its physical and social infrastructure. The concerned State Governments were also required to take steps to strengthen the organizational capacities of the local bodies/development authorities and provide adequate financial resources for development. The Central Government and NCR Planning Board were to provide financial assistance for strengthening of regional linkages like transport, communications, etc. for the development of these areas.

Selection process for identifying counter magnet Areas according to National Capital Panning Board

Stage I – Preliminary Criteria

- Distance- Selected CMA should be located outside the NCR.
- Population- of any CMA should range between 3-5 lakhs and above.
- Connectivity

Stage II – Special Consideration for Lateral addition and deletion

For Addition

- Existing CMA's
- State Government Recommendation of Cities/towns

For Deletion

- Cities/towns located too near (100 km distance)

Stage III – Final Criteria for selection

- Migration from the influence zone

- Development Index
  - Infrastructure Development Index
  - District Development Index

To select CMA's in regard to NCR Plan 2001, initially 36 cities falling within 100-400 km from Delhi were considered and analysed in respect of various parameters i.e. their size and status, population growth, work participation ratio, population density and spatial parameters like accessibility, congruence with in-migration corridors and proximity to other contenders in the region. Based on the analysis of these parameters and after discussions and consultations with the concerned state governments, following urban centres were recommended as possible contenders for further scrutiny to decide/finally select the counter magnet areas.

a. Hissar, Yamuna Nagar, Ambala and Karnal in Haryana

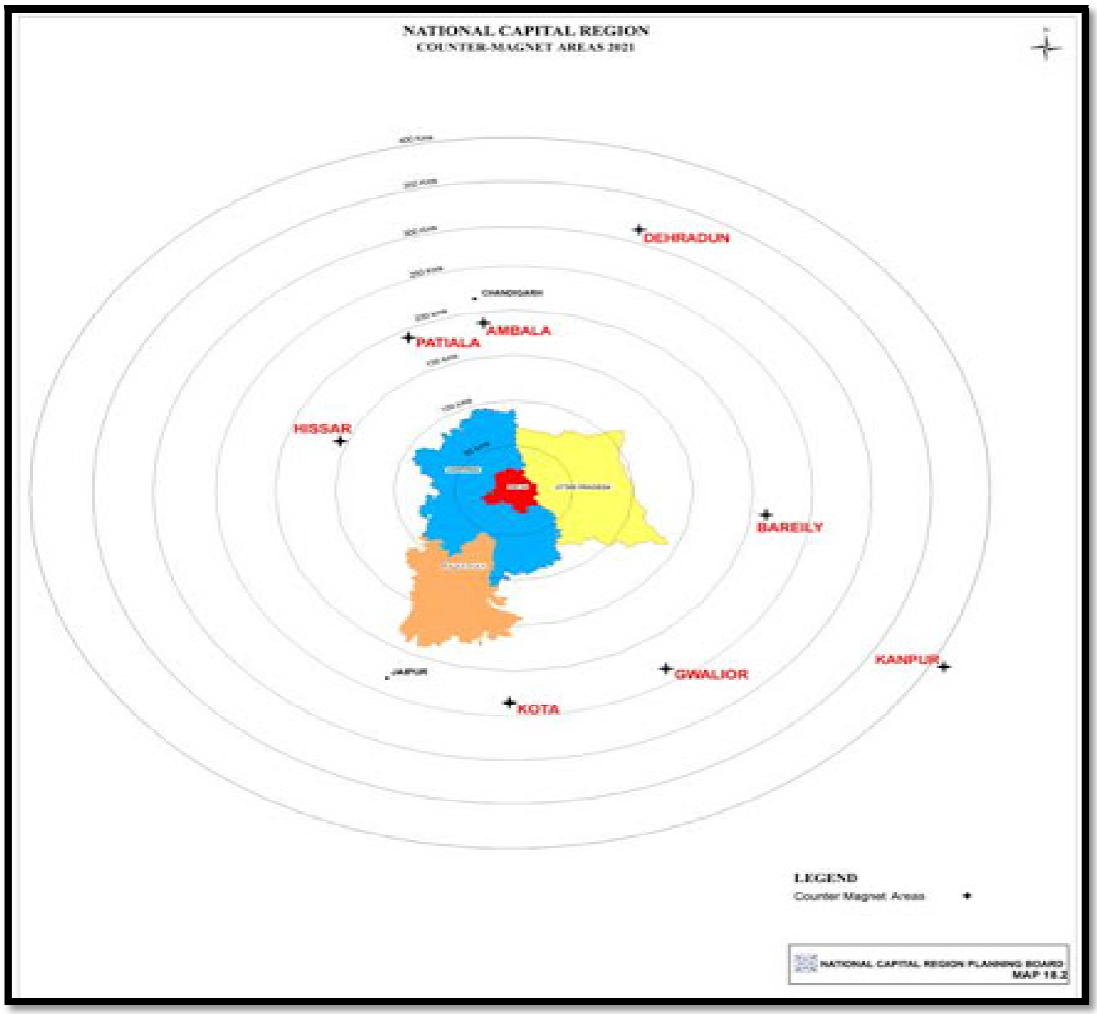
b. Gwalior in Madhya Pradesh

c. Patiala, Bhatinda and Ludhiana in Punjab

d. Kota, Sikar and Ajmer in Rajasthan

e. Bareilly, Moradabad, Saharanpur and Allahabad in Uttar Pradesh

Fig 1: Map of Counter Magnet Areas, National Capital Region



Source: Report of National Capital Region Planning Board, 2001

Final selection of five existing counter magnets was based on the cumulative evaluation of these urban centres by preparing city profile for all of them and by using certain indicators such as demographic changes, productive activity, finance & commercial services, public & semi public facilities, urban management, infrastructure (utilities & services) and growth impulse. Based on the final evaluation five counter magnet areas to NCR were identified in the 56th meeting of the statutory Planning Committee of the NCR Board: Ambala in Haryana, Bareily in Uttar Pradesh, Dehradun in Uttarakhand, Hissar in Haryana and Kanpur in Uttar Pradesh. The Committee regarding the three existing CMAs, namely, Gwalior in MP, Kota in Rajasthan and Patiala in Punjab decided that these may continue as Counter-Magnet Areas. However, financing to the projects of these Counter-Magnet Areas would be given low priority but in order to make these counter-magnets capable to undertake their assigned roles effectively the planning board proposed some policies as per revised RP-2021 for their future development like strengthening of economic base functions, up gradation of physical and social infrastructure and strengthening of regional linkages.

II. STUDY AREA

Kota City, Rajasthan

Kota forms south-eastern part of Rajasthan state. It is between 24°25' to 25°51' north latitude and 75°37' to 77°26' east longitude. It is bounded by the district of Sawai Madhopur on the north, the state of Madhya Pradesh in the north east and by the districts of Baran and Bundi of Rajasthan in the east and North West respectively. Kota as Counter Magnet is an important industrial town of Rajasthan, located on Delhi-Mumbai broad-gauge railway line, is also famous as Educational City. The State Government has prepared Master Plan for Kota city for the perspective year 2023 for the projected population of 15.0 lakhs. This not only has got good connectivity by rail, road and air but also has sufficient water resources as being on the bank of Chambal River. This also generates adequate electricity to distribute in the state.

I. Location & Connectivity

Kota, the industrial capital of Rajasthan and is located in the South-East part of the state along the eastern bank of Chambal River. It is located 240 Km. away from Jaipur, the capital of Rajasthan and is 470 Km. away from Delhi. It is located on East- West Corridor of India on NH-12 linking it with Jaipur and Jabalpur.

Fig 2: Map of Kota district

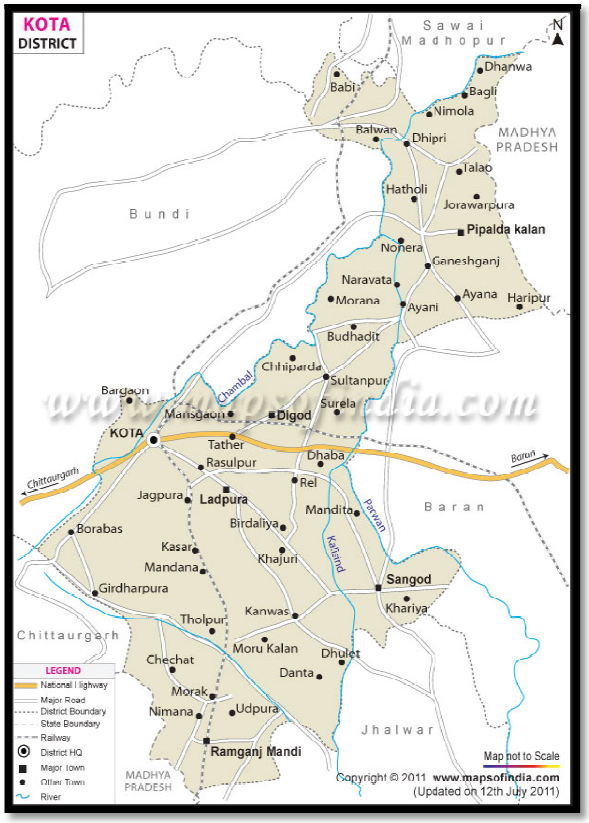
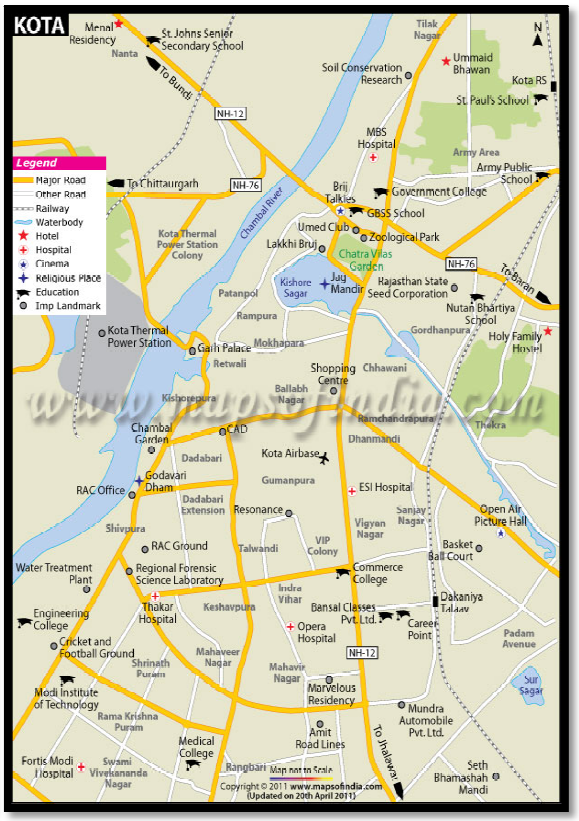
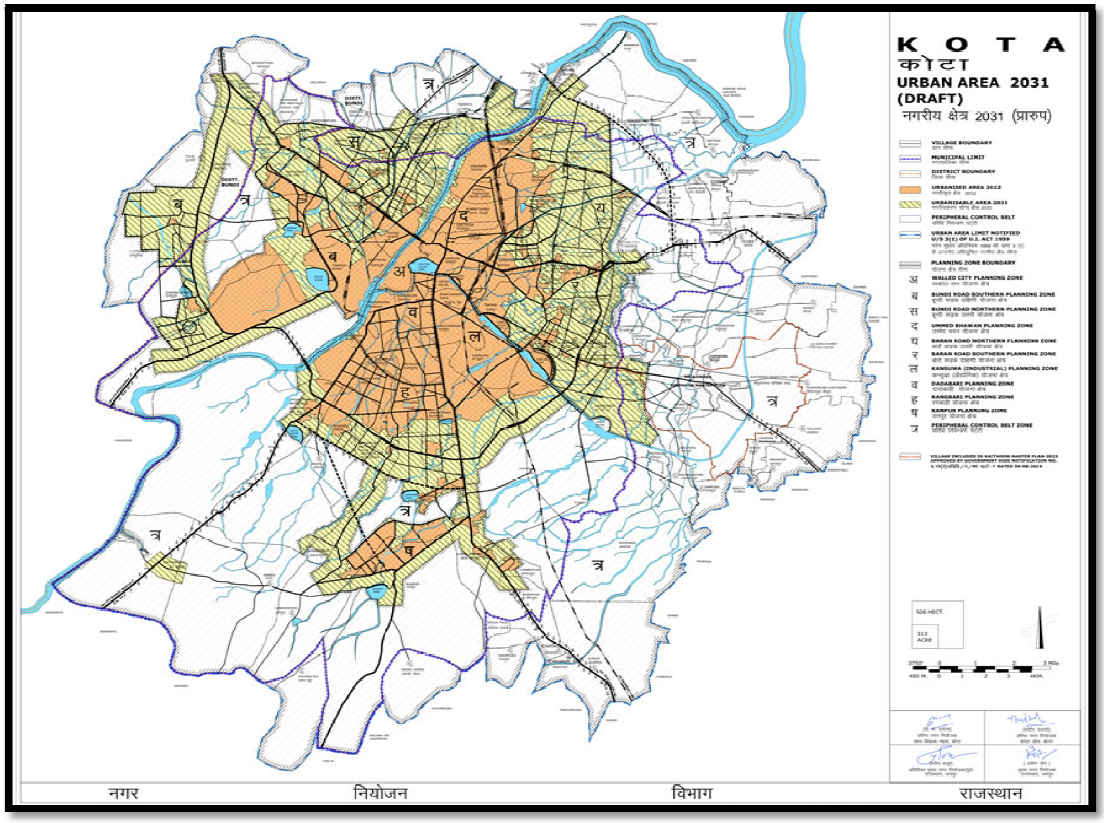


Fig 3: Map of Kota city



Source: Maps of India https://www.mapsofindia.com/

Fig 4: Projection of Kota City's Urban Area 2031



Source: Kota Master Plan, 2031, (16-05-2013)

II. Regional Importance

Kota is a well established regional urban centre and is a focal point for all industrial development in the state. Kota's identity as a major industrial centre with abundant infrastructure, rich rural hinterland, excellent linkages with Delhi and Mumbai, and identification as a counter magnet to the national capital makes it an important regional growth centre. Hence, over the years it has emerged as important regional centre

III. Population, Growth Rate, Migration and Economic Base

Population

The population of Kota district has increased from 1,20,345 in 1961 to 5,37,371 in 1991 and 10,01,694 in 2011 and spreads over an area of 5197.88 sq. km whereas the population of Kota city as per 2011 census is 1,001,694. The decadal growth rate of Kota has increase of 37.53% in 1951 to 50.0% in 1991.

Migration

The total in-migration from all other districts of India to Kota is 1,07,511. This includes 45,958 males and 61,553 females. Persons migrated to Kota from rural areas is 32,144 people while persons migrated from urban areas is 75, 367 people. On the contrary, 2202 persons have out migrated from Kota to Delhi which includes 1069 males and 1133 females.

Economic base and Occupation structure

Major economic base of Kota is industrial activities, trade and commerce and presently 21.5 percent of the total workers are engaged in industrial activities and 21 percent in trade and commerce while the corresponding figure for service sector is 33 percent of the total workers. There are 29 large and medium scale industries and 873 small scale industries. Kota is famous for its stones. The fine-grained variety of limestone is known as Kota stone. As per Master Plan 2023, work force participation ratio has increased from 28.43% in 1991 to 29 % in 2001.

IV. Master Plan

The Master Plan 2023 was prepared by Town Planning Department, under Rajasthan City Improvement Act, 1959, section 3 of sub-section 1. This was published with reference to Rajasthan Govt. Notification dated 27/12/01. The planning area of 1,25,000 acres covered under Master Plan includes 64 revenue villages.

Status report of NCRPB funded projects

At present Kota is not taking any loan from NCRPB. The developments taking place is through the revenue generated by Urban Improvement Trust and other governing agencies. However, the details of two projects sanctioned by NCRPB are as given below:

Project 1 Construction of integrated township at Srinathpuram, Kota:

Rs. 2 crore loan was taken for the township development but at the later stage they stopped taking the monetary help. The township is under the stage of development, few plots are vacant and few are occupied.

Project 2 Providing feeder main to provide drinking water facility for the newly developed colonies of UIT / RHB / Medical College:

- This project is being developed by the State Govt. funds through Urban Improvement Trust.
- This Rajasthan town is a training hub for students aspiring for premier technology and medical institutions. It is also an industrial centre with large factories in engineering equipment, fertiliser and chemical sectors.

III. REVIEW OF LITERATURE

The review covers books, research articles, reports and popular articles on the research topic. The themes covered in the review are: Counter Magnet areas, Trends of Urbanisation and various reports and research articles related to the study area.

A. TRENDS OF URBANISATION

In the paper **Khanna, D., (2019)** tried to understand the trends and inter-district variation in the level of urbanisation in Rajasthan using Indian Census data during 1901-2011 and correlation between rate of poverty and urbanization. Urban population in Rajasthan increased more than eleven times during the last eleven decades i.e. from 1.48 million in 1901 to 17.05 million in 2011. In the year 2011 the proportion of urban population in Rajasthan was 24.87% which is below the national average of 31.16%. Level of urbanization in Rajasthan is lower than the adjoining states. Urban population in Rajasthan increased from 1.48 million in 1901 to 17.05 million in 2011. It indicates that absolute urban population in Rajasthan increased more than eleven times during the last eleven decades. It is interesting to note that during the period between 1901 and 1941 the levels of urbanization in Rajasthan were much higher than the all India. The author divided the entire study period into three major periods of urbanization in the state of Rajasthan. These are: Period of Slow Urbanization (1901 to 1941), Period of Moderate Urbanization (1951 to 1971), and Period of Rapid Urbanization (1981 to 2011). It was observed that industrial development in Bhilwara, Kota, Jaipur, Udaipur, Bhiwadi, Neemrana etc has affected the spatial pattern in urbanization in the state. The trickle down effects of New Delhi can easily be seen on the industrial and economic development of Bhiwadi-Neemrana (Alwar), the closest district to the national capital.

In this paper **Bala Kissan, Prof. A., Akhter, Dr.Ali., Kamraju, M., (2018)** examined the impact of urban expansion on land use land cover of Hyderabad city over the years with the help of change detection technique and the results showed that share of area under the vegetation cover increases

outward from the city centre making quality of life poorer at the centre, urbanisation has alternated the land use land cover in the region with agriculture land being converted into settlements, roads, railways and commercial complexes.

Sujathama. C., (2018) tried to examine the urban growth and trends of urbanization in Rayalaseema region during the period 1871- 2011. The authors relied on secondary sources of data such as District Census Handbooks of Indian Census, Municipal Administrative reports and local authorities. The study revealed that urbanization picked up starting from 9% in 1931 to 11% in 1941, 13.8% in 1951. 15.67% in 1961 and later on it has been increased to 16% in 1971. Results of the study concluded that Rayalasema has witnessed high urban growth with slight fluctuations. The period between 1901-11 and 1911-21 is the period of stagnation and decline, 1931-41 is the period of rapid growth and 1941-51 is the decade of slow growth .After 1951 the growth rate has shown acceleration with slight fluctuations. It can be seen that the urban growth and urbanization of Rayalaseema has been phenomenal with considerable changes over the past One Forty years.

World Urbanisation Prospects (2018) The report talks about the meaning of Urbanisation, its trends in present world scenario and the urbanisation prospects.

The article in the report published by **KPMG (an organization) (2017)** seeks an effective approach pertaining to achieve sustainable urbanisation levels across NCR and also to get a better understanding of unplanned growth despite the existence of three master plans of Delhi and two regional plans of NCR.

In the paper **Saheed, Dr. (2017)** examined the growth of Alwar city as a small town in the National Capital Region of Delhi (NCR) in India. He further studied the role of demographic expansion, industrial growth and spatial developmental factors in shaping the overall landscape of the city. After collecting the data primarily by interviewing the locals he suggested that the city growth is marked by exclusion and disadvantage to certain groups due to their locale, class and social identities. The forces such as market, policies and power of the state acting parallel to each other in shaping the landscape of the city are defying the larger policy goals of the state to make the Alwar city as an inclusive, dynamic and modern urban growth centre.

Dubey. S., (2017) gives a detailed account of the way in which rural land at the periphery of the metropolitan capital of Delhi is acquired, occupied, claimed, sold, and developed in formal as well as informal ways by both state as well as non-state actors. An analysis of the plans and policies of the Noida authority was undertaken by a study of the policy reports and reviews published by the Town and Country Planning Organisation (TCPO) on the planned development of Noida and the four master plans that have been designed by the authority. This paper has presented a view of land

development from a rural–urban interface in the metropolitan capital of Delhi. By looking at the transformation of Khora village, it has highlighted the dynamic interaction between the various state actors and the residents of Khora.

In the paper **Chetana. R., Sabyasachi. T., (2016)** tried to find the trends and patterns of Urbanization in major states in India. In 1981, the highest percentage urban population was recorded in Maharashtra (35%) and the lowest urban population was recorded in Assam (9.9%). In contrast, in 2011, the highest percentage of urban population was registered in Tamil Nadu (48.5%) and lowest in Bihar (11.3%). In 1981, the all- India urban population was 23.3% which increased to 31.2% in 2001.

The study conducted by **Misago. P. J., (2016)** sought to explore popular and official perceptions towards migration and human mobility, their origins and implications for socio-economic development. The study identifies pervasive negative popular and official perceptions towards migration and human mobility. This paper argues that Ekurhuleni Metropolitan Municipality , one of South Africa's cities most transformed by migration and human mobility, faces a dual challenge (of negative perceptions and lack of migration policy) that threatens to derail the city's aerotropolis project the same way it has undermined its past and current socio-economic development plans and programmes It employed customised interview guides for different sectors with specific focus on the perceived impacts of migration on: (a) impact on wages in entry level sectors; (b) estimating job creation through labour flexibility, skills and entrepreneurialism balanced by the possibility of competition due to the emergence of 'ethnic niches'; (c) tax contributions versus resource outflows in the form of service delivery; (d) effects on local economic prospects due to resource outflows in the form of material remittances; (e) effects on health and social cohesion and values.

Roy. A., (2016) explains this urban crisis by analyzing the structure of urban informality in India. While informality is often seen to be synonymous with poverty, this article makes the case that India's planning regime is itself an informalized entity, one that is a state of deregulation, ambiguity, and exception. This article states that India cannot plan its cities. Indian cities serve, in such a framing as a proxy for the Third World megacity, that which defies all norms of rational planning and 'future-proofing'. The persistent failure of planning or the splintering of cities through the privatization of planning all seem to be convincing and adequate explanations for the crisis that is the Indian city, or the Third World megacity.

Singh. J., Bhutani. S., (2016) examined the trends of urbanization in Punjab from 1971-2011. The authors studied the relative growth of urban population with respect to the size of towns. They tried to study the decade-wise trends of population growth of towns and the factors affecting them and

also examined the spatial patterns of urbanization in 2011. The authors used Nearest Neighbour Analysis to conduct the study. The share of urban population in total population consistently witnessed an increase from 23.73 per cent to 37.48 per cent. Thus between 1971 and 2011, the number of towns has doubled The trends of urbanization, studied by taking into account the urban-rural ratio, showed consistent increase between 1971 and 2011. Though there was a consistent rise in the proportion of urban population to total population, yet the pace of growth of urban population varied in each census decade, depending upon the prevalent socio-economic and political scenario of the state.

In this paper the authors, **Islam. M., Ekhalaq Khan. M., (2014)** attempt to understand the trends and patterns of urbanisation at the national level. The paper also throws light on the present pattern of urbanisation across the different states. The growth of urban population in metropolitan cities is marked with a declining trend. During 1971-81, it was 4.2 % and 3.5 % in 2001- 2011, hence 0.7% is a change in growth of urban population in metropolitan cities Likewise, the change in growth of urban population of class II towns is noticeable. A large number of new towns emerged during the last decade, which contributes prominently to the urbanisation.

This paper seeks to review the effects of fast growing urbanization in Indian society through analysis of its multi-dimensional impact. For the study **Jayswal, N., Saha, S., (2014)** gathered data majorly through secondary sources like Government Records, books, articles, web-based journals. The results showed that since the mega cities have reached saturation level for employment generation and to avoid over-crowding into the over-congested slums of megacities i.e Bombay, Calcutta, Delhi, Madras, it is required to build strong economic sector in the urban economy. Growth efforts and investments should be directed towards small cities which have been neglected so far so that functional base of urban economy is strengthened. Policy should also be related to proper urban planning where city planning will consist of operational, developmental and restorative planning. Operational planning should take care of improvement of urban infrastructure, e.g. roads, traffic, transport etc.

Kumar. A., Kumar Rai. A., (2014) tried to understand the Urbanization Process, Trend, Pattern and its Consequences based on census data during 1901-2011 in India. Results showed that India urban population has increased from 2.58 crores in 1901 to 37.71 crores in 2011 due to rapid industrialization and rural to urban migration.

The present research work is an attempt to understand the level, trends and spatial patterns of urbanisation in India during 1991-2011. The study period provided some important suggestions for the planners and the policy makers to deal with the haphazard urban development and pressure of population in the metropolitan cities and some insight in industrialization and rural to urban

migration According to **Mundhel. N., Jaybhave .G., (2014)** number of population residing in urban areas has increased from 2.58 crores in 1901 to 37.71 crores in 2011 and number of urban agglomeration /town has grown from 1827 in 1901 to 7935 in 2011. The rapid growth in the last few decades has been because of rapid industrialization and rural to urban migration. Urbanization within country is very lopsided. Western and Southern part of states is more urbanized as compared to extreme parts of Eastern and Northern, which have the least urbanisation in the country.

Rao, N., (2014) addresses some key issues of urban governance in India and its future along with the pattern of urbanisation in India in his book. The book also analyses the five year plan system of India and states the issues like policies which promotes the development of smaller towns in new urban centres, to ease the increasing urbanisation pressure, issues of urban housing and town and city planning. It further talks about the India's inability to build cities of tomorrow and how cities struggle to find ways of working around governance structure in India and that there is need for change. The author concludes by stating that it will be for scholars, practitioners and policy makers to turn their attention towards constructing dynamic system of metropolitan governance that are less fractured and less fragmented.

Sen. P., (2014) attempted to unravel the exclusionary tendencies that go on to characterize the urbanization process in developing societies with particular focus on the urban reality in fast urbanizing India. In attempting to take a stock of the aspiring JNNURM programme- Section IV identifies some of the major loopholes that go on to adversely impact the quality of life of the poor and the vulnerable. To counter the disturbing trends there needs to be a fundamental shift in the way planners and policy-makers approach urban development. Radical and innovative policies need to be so designed as to cover the entire urban hierarchy and all vulnerable sections of the population. A long-term land use and land management strategy too is necessitated to meet the housing requirements. Cities in a globally competitive environment must be empowered, financially strengthened, and efficiently governed to respond to the needs of their citizens.

Douglas. M., (2013) identified the rapid urban transition now underway brings even more importance to key questions about the quality of human life associated with the liveability of cities. The author asked questions like, what is a 'liveable city'. Why are we concerned about the liveability of cities in a global era? Where do we begin to make our cities more liveable? The urban imagination surely needs to be animated with people who are social beings as well as workers and consumers, and that we must surely have a greater grasp of city life than to see it only as infrastructure, physical environment and finance.

The purpose of this paper is to examine the urban and environmental problems associated with the rapid urbanisation in Dammam Metropolitan Area of Saudi Arabia. **Abukorin, A., (2011)** aims to

define the necessary measures for managing such rapid urbanisation. In doing so, the paper starts by examining the rate and directions of urban growth in DMA. Then, it examines the nature and extent of the associated environmental and urban problems and their socio-economic impacts. And finally, the paper proposes some measures for controlling rapid urbanisation and for minimizing its environmental and urban impacts. Through an extensive analysis for urban development in DMA, the paper has came to define three main forces for rapid urbanisation in DMA, the economic boom and housing-driven thought, the private sector and land speculation, and urban planning regulations. But this rapid urbanization has created many environmental and sustainability problems. The paper has defined three main problems associated with rapid urbanisation in DMA which are deterioration of land and marine environments, unsustainable development practices, and unsustainable urbanization. The paper therefore proposes "sustainable urbanisation" as a necessary approach for managing urban growth in DMA.

Bhagat. R. B., (2011) talks about the rapid increase in the urbanisation level in India since 1991. According to the 2011 Census, the urban population grew to 377 million showing a growth rate of 2.76% per annum during 2001-2011. The level of urbanisation in the country as a whole increased from 27.7% in 2001 to 31.1% in 2011 – an increase of 3.3 percentage points during 2001-2011 compared to an increase of 2.1 percentage points during 1991-2001. The author talks further about the components of urban population growth like natural increase, net rural-urban population, and rural to urban migration and has presented the pattern of urbanisation on the states level basis. The author has observed the emergence of huge number of new towns during the last decade, contributing significantly to the speeding up of urbanisation.

In the paper **Bhakare. P., Sarang. S., (2010)** attempted to present the growth of urbanisation in the study area, to study the occupational structure of the population in the study area and to present the changing trends in it. The authors also tried to find out the major problems related to the various aspects of population in the study area and to do necessary recommendations. They used various formulas to calculate the data such as the formulas regarding population density, Population Concentration Index (PCI), population growth and to calculate trends of urbanisation formula of degree of urbanisation was used. The study revealed that in the late post-independence period the urbanisation increased in comparison to the pre-independence period. It was due to technical development in agriculture, industrialisation, growing facilities of education, mostly in higher education, increase in the transportation and communication facilities, increase in the civic amenities in the cities and increasing migration considerably augmented the growth speed of urbanisation It is found that population distribution in a study region is closely related to its physical, economic and social setting It is observed from a district level analysis of population

density and distribution that all the five districts showed a steady and slow growth of population density in the pre-independence period. While, in the post independence period population density increased with faster rate.

Bahadur Thapa. R., Murayama. Y., (2009) examines the spatiotemporal pattern of urbanization in Kathmandu Valley using remote sensing and spatial metrics techniques. The study is based on 33-years of time series data compiled from satellite images. The urban built-up areas in the valley had a noticeable increase, from 3% (2,010 ha) of the total land in 1967 to 14% (9,717 ha) in 2000, showing spatial patterns of urbanization with consistent (5%) growth in 1991 and 2000. However, an opposite trend in shrubs (13,563 ha) and forest (15,800 ha) lands was observed, where half of the shrubs land changed to another class by 2000, including a significant loss of area between 1978 and 1991. Similarly, the forest lost 4% of its land over the three and a half decades. However, after gaining a small area in 1978, the forest lost land area in later years. Agricultural lands still cover half of the valley, but their area has increased and decreased in different time intervals. The agricultural land decreased slightly by 1978, but increased to 56% of the total land by 1991, and had again decreased to 54% in 2000. Only 2% of the total land in the valley is covered by water.

The present study aims to understand the trends, growth rate of urbanisation across major states of India in recent decades (1971-2001). According to **Chandrasekarayya. T., Ganesh. P., (2009)** the level of urbanisation was high in industrially as well as economically developed states like Maharashtra, Tamil Nadu, Gujarat, Karnataka, Punjab and West Bengal. The pace of urban population was high in backward states like Rajasthan, Assam, Bihar Uttar Pradesh. An over whelming proportion of urban population inhabited in class I cities West Bengal, Maharashtra, Tamil Nadu, Gujarat and Andhra Pradesh.

In the paper **Dr. Singh. J., Yadav. H., Dr. Smarandache. F., (2008)** attempted a district level analysis for Rajasthan state to perceive urbanization due to migration their inter linkages and affiliations. In Rajasthan State, District level analysis of urbanization due to migrants shows trend invariably for all the districts of the state though the contribution in urbanization by the migrants varies from district to district. On the other hand there are districts like Jaipur, Ajmer, Kota and Bhilwara where the percentage share of migrants settling in urban areas with context to the total migrants is comparatively much higher in last three decades i.e. 1991-2000, 1981-90 & 1971-1980.

In the paper **Guneralp, B., Seto, K., (2008)** identified the phases of urban growth, they evaluated the impact of urban growth on several environmental indicators like land use, air quality, and demand for water and energy, they also studied the environmental impacts of an urbanizing population and landscape, and how do these impacts change over time as the urban economy

develops. For research they used case study method and the results showed that all developable land will be urban by 2020 and the increase in the number of vehicles will be a major source of air pollution. It also showed that the demand for water and electricity will rise, and the city will become increasingly vulnerable to shortages of either. The present population scenario indicates that migration will continue to be the fundamental cause of population growth.

Baleshwar. T., Pomeroy. G., Cusack. C., Thakur. S., (2007) studies about society and planning that goes on in cities in India. The chapters- 'Urbanisation in Rajasthan at the dawn of 21st Century' is especially useful. It states that Urbanisation level in Rajasthan has increased at district level among which Kota is most urbanised followed by Jaipur and Ajmer as well as at the tehsil level like Jaipur, Bikaner, Jodhpur, Ajmer and Kota. The author observed that the influence of Delhi mega city on urban development is visible on Rajasthan. Another chapter 'Hierarchy and Spatial Distribution Pattern of Urban Centres in Rajasthan' analyses the hierarchy and spatial distribution pattern of urban centres of Rajasthan. The authors evolve the strategy so that urban centres may become viable for the effectiveness of programmes to combat social exclusion, to protect and repair the environment and human development. Compactness has been observed in a few centres like Jaipur. There were 17 districts where no urban settlement was found within a distance of 10-25 km. The study further made clear that Jaipur and Kota districts of Rajasthan reported higher percentage of urban population followed by Bikaner, Churu and Ajmer.

The paper by **Datta, P., (2006)** endeavours to illuminate on the process of urbanization in India with emphasis on level, tempo of urbanization and urban morphology using Indian Census data during 1901- 2001. It will try to trace pattern of urbanization, urban problems and related policy issues. Volume and Trend of Urbanisation in India can be attributed to mainly three components, natural increase, net migration and areal reclassification. Basic feature of urbanization in India can be highlighted as, lopsided urbanization induces growth of class I cities. Urbanisation is mainly a product of demographic explosion and poverty induced rural - urban migration. Rapid urbanization leads to massive growth of slum followed by misery, poverty, unemployment, exploitation, inequalities, degradation in the quality of urban life. Urbanisation occurs not due to urban pull but due to rural push and finally distress migration initiates urban decay.

The study by **Zhao, S., Fang, H., Song, K., (2006)** examined the land use land cover changes over a period of time and the impacts of urbanisation process on air and water quality, local climate, and biodiversity. Data was collected from Satellite images of the city and all the other data was collected from secondary sources. The result showed that the rapid urbanisation can increase the temperatures in the city. The urban growth has caused a number of ecological problems, including

degradation of air and water quality, decline in native species and as increase number of alien species and alteration of the local climate.

Hall, P., (2002) gives a historical overview of the developments and changes in the theory and practice of planning in the United Kingdom, throughout the entire twentieth century. It introduces the establishment of planning as part of the public health reforms of the late nineteenth century and goes on to look at the insights of National and regional planning, and planning for cities and city regions, in the UK from 1945 to 2000. Planning in the United States since 1945 discusses the continuing trends of urban dispersal and social polarization, as well as initiatives in land-use planning and transportation policies. Finally, the book looks at the nature of the planning process at the end of the twentieth century, reflecting briefly on shifts in planning paradigms since the 1960s and going on to discuss the main issues of the 1990s, including sustainability and social exclusion and looking forward to the twenty-first century.

Jacobi, P., et al, (2001) examines the changing nature of urban environmental risks, the rules governing the distribution of such risks and their differential impact, how the risks arise and who is responsible. It also concerns with the relationship between urban environmental health and sustainability, our use of these terms requires some clarification. The authors clearly describe the most pressing urban environmental challenges, such as improving health conditions in deprived urban settlements, ensuring sustainable urban development in a globalizing world, and achieving environmental justice along with the greening of development. They argue that current debates on sustainable development fail to come to terms with these challenges, and call for a more politically and ethically explicit approach. The ultimate concern is the physical dimension of the urban environment, and issues such as safe water, sanitation and air pollution.

B. COUNTER MAGNET AREA

The report on magnet cities by **KPMG (an organization), (2014)** states that a city with a strong magnetic pull draws in new residents, visitors and business investment. It states that just like magnets, cities seem to have only two states: positive or negative similarly cities tend to either grow or shrink, there is no such thing as a neutral magnet; nor is there a neutral city, so what can be done to help second cities across the developed world improve their offer, how can second cities increase their magnetic pull and is it possible to transform a negative magnet city into a positive magnet city. These were the questions this report tried to answer. The organizers of the report did case studies on such nine developed cities around the world that have successfully flipped their magnetic switch.

Revised Regional Plan 2021 National Capital Region Planning Board (2013). The Regional plans of 2001 and 2021 of NCR and sub regional plans of NCT-Delhi, Uttar Pradesh, Rajasthan and

Haryana was analysed. Financial assistance from planning board for the development of land, sewerages, transport and power was tabulated. Issues and challenges like rapid urbanisation, seismic zone, water management was mentioned in the report.

Report by National Capital Region Planning Board, (2013) In the chapter 1 of this report, study was conducted to review the "counter magnet area development strategy", to suggest changes in the strategy or to evolve an alternative strategy of development of counter magnet areas for making them to play an effective role in achieving the objectives of the regional plan 2021. In this report Alwar was chosen as the well established urban centres marked by specialized secondary and tertiary sector activities and providing job opportunities which normally cannot be performed by other lower order centres and Bhiwadi as a priority town, other than this the demographic profile of NCR including population growth, population density, sex ratio, age structure, work force, literacy rate, settlement pattern was tabulated.

Sub Regional Plan for Rajasthan Sub-Region of NCR- 2021. The Regional Plan 2021 for NCR as prepared by the National Capital Region Planning Board (NCRPB) was notified on 17.09.05 under Section 13 of NCRPB Act, 1985.The main objective of the assignment is to prepare SRP for RSR with the horizon year 2031 as per the provisions of National Capital Region Planning Board Act, 1985. In the chapter 'Counter Magnet to NCR' there was a mention of selected towns/ cities as counter magnets from Rajasthan. The two of the CMA towns in Rajasthan viz., Jaipur and Kota have a great potential to intercept the migration from Rajasthan to NCR. For this, induced development of Jaipur and Kota is important to absorb the migration. The CMA development strategy is based on the extended decentralization strategy of NCR with three areas of intervention. These include: upgrading of regional linkages, improvement of economic base, and upgrading of urban infrastructure through urban development.

Each CMA would provide land development with quality physical infrastructure i.e. water supply, sewerage, storm water drainage, power supply, solid waste management and social infrastructure i.e. health, education, recreation, safety, security. The availability of high quality investment environment in these areas itself would be an attraction to facilitate the setting up of desired economic activities. For the enhanced development of these CMAs, it is necessary to bring in investments and development in counter magnet cities Jaipur and Kota. This would help not only in development of Jaipur and Kota but also would give necessary impact to decrease migration to the NCT. Kota being a knowledge city and as Technical and management-resource cum- production centre has a great potential of being a counter magnet to NCR

C. STUDY AREA

The authors attempted to analyze the processes of spatial and temporal change pattern in Kota City of Rajasthan, which is undergoing a fast but unplanned development. **Dadhich. A., Goyal. R., (2018)** found out the trend in increased built-up areas especially in periphery of the city with decreasing trend in agriculture land. This study suggests that this spatio-temporal model provides not only a quantitative description of changes in the past but also the estimated direction and magnitude of likely changes in the future. Hence, if the current trends exist without sustainable development measures, severe land degradation will occur that could indirectly affect the local environment of the city. Therefore, this study is helpful for local authorities to understand the complex land use system and develop guidelines as well as policies for sustainable urban expansion and ecological conservation.

Similarly, **Sharma. M., Dr. Pratap. M., (2017).** in their paper examined the quality of drinking water at places like Government hospitals, bus stand, railway station and other public places as the only perennial river of Rajasthan is the Chambal River and it is the main source of drinking water for Kota city as well as the district. It has been observed that with the industrialization, urbanization, population increase and wastewater inflow into the river, the water quality of Chambal is getting deteriorated day by day. Therefore, the authors took the samples of drinking water from various public places and found out the signs of severe pollution in drinking water sources and they also stated that there is need to monitor and rectify the quality of drinking water in the Kota city at the earliest.

Choudhary. M. P., Gupta. H., (2016) stated that the quality of air is being continuously deteriorating with the developmental activities and technological advancements. In most of the urban areas, level of air pollution is increasing and creating health menace. The similar situation was seen in Kota city of Rajasthan where the authors examined the air quality. They found out that the average Air Quality Index of Kota city has been found as 140 that come under the category of unhealthy for sensitive ones while the average AQI during day is 185 that come under the category of unhealthy and average AQI during night is 95 that come under the category of moderate pollution.

Meena. S. B., Dudi. D.C., (2015) found out in their study that the climate change puts additional stress on ecological and socio-economic systems that are already facing tremendous pressures due to rapid urbanization, industrialization and economic development. The similar situation was observed by the authors in Kota district of Rajasthan. They observed that climate change may

intensify sewage problems if intensive rainfall becomes more frequent, increasing the risk of the sewage contaminated flooding of low lying land areas in Kota district. Flash floods may, therefore add to the climate change related water problems which need to be addressed in Kota in the near future. Average temperatures are feared to increase. Industrial operations and automobiles have released gigantic amounts of emission that have intensified these problems. Therefore environmental degradation represents the greatest challenge facing Kota district.

Chotia. V., Chaudhary. O., (2014) tried to analyze the disparities in infrastructure facilities across the 33 districts of Rajasthan. The author tried to compute a composite or an overall Infrastructure Development Index (IFI) by combining various infrastructural indices constructed on the basis of social, economic and physical criteria at the district level of Rajasthan. They divided the districts into developed and underdeveloped categories on the basis of economic, social and physical infrastructure present in the districts of Rajasthan, they stated that more and more efforts should be aimed at creating a sound infrastructure at the district level, which will eventually raise the district domestic product, reduce the poverty levels and in due course improve the standard of living of the people of Rajasthan.

In his research **Dasgupta. A., et al., (2012)** intends to estimate the risk of desertification in order to take proper measures for its prevention, to predict the future risk and to decide priority areas for proper conservation. The study was conducted in Kota district of Rajasthan. Four major source of desertification in Kota, namely Gully and Ravine erosion, inappropriate mining practices, growing urbanization and random deforestation was identified. The study reveals the southern part of Kota is the area under alarming risk of desertification. At present, as the all the vegetation cover had been removed by human intervention and the land surface is totally exposed to weather. The study revealed that in Kota, various anthropogenic pressures are accelerating land deterioration, coupled with natural erosive forces.

Gupta. N., et al., (2011) tried to carry out physico-chemical study by determining various parameters for water quality of River Chambal along with Kota City area during pre-monsoon seasons of the years 2007 to 2009 and indicated its suitability for intended purpose. Analyzed data clearly reveals that at some places river water is highly polluted but overall river water along Kota City area is moderately polluted by organic as well as inorganic substances. This has happened due to disposal of untreated domestic and sewerage effluents in river directly through so many drains from city area. It was also observed at some locations solid waste also dumped in river making conditions worse. To sustain the river water quality for intended purpose, the diversion of local drains which carry effluents from various sources from city area has to be made possible.

IV. RELEVANCE OF THE STUDY

As Kota is the second biggest urban district by area in Rajasthan and only selected Counter Magnet area from the state followed by the capital, it was important to look into the overall scenario of the city. Therefore, the research work will look into the transformation of Kota as an urban area and its selection in the smart city mission by understanding the urbanisation trends over the past 30 years. It will also look into the city's urban population structure. The study will also try to understand the feasibility of Kota city as a Counter Magnet to NCR which will further help the administrators and planners to plan the city sustainably. Therefore the study will provide suitable suggestion to the researchers or administrators to sustainably plan cities with the conservation of resources for the future generation and with the vision of development as well. The study will be a contribution in the field of regional/town planning and urban geography as well.

V. OBJECTIVES OF THE STUDY

1) To show trends of Urbanisation in Kota City.
2) To examine the feasibility of Kota city as Counter Magnet to National Capital region.
3) To provide suitable suggestions for sustainable development of Kota city.

VI. HYPOTHESIS

1) H_0- Kota city is a suitable Counter Magnet to NCR.
2) H_1- Kota city is not a suitable Counter Magnet to NCR.

VII. RESEARCH METHODOLOGY

The most fundamental step in research is to develop a systematic plan for investigation. It includes the methodological aspect such as selection of tools and other techniques of statistical analysis in order to achieve all objectives of the present investigation.

DATA COLLECTION

To conduct the study set of qualitative and quantitative methods will be used. Data will be gathered from primary and secondary sources. Primary data will be collected through a field survey with the help of questionnaire/schedule and interview method and major focus will be on the economic status, physical and social infrastructure and regional linkages of the study area. Secondary data will be collected from the various research institutions, libraries and related government departments.

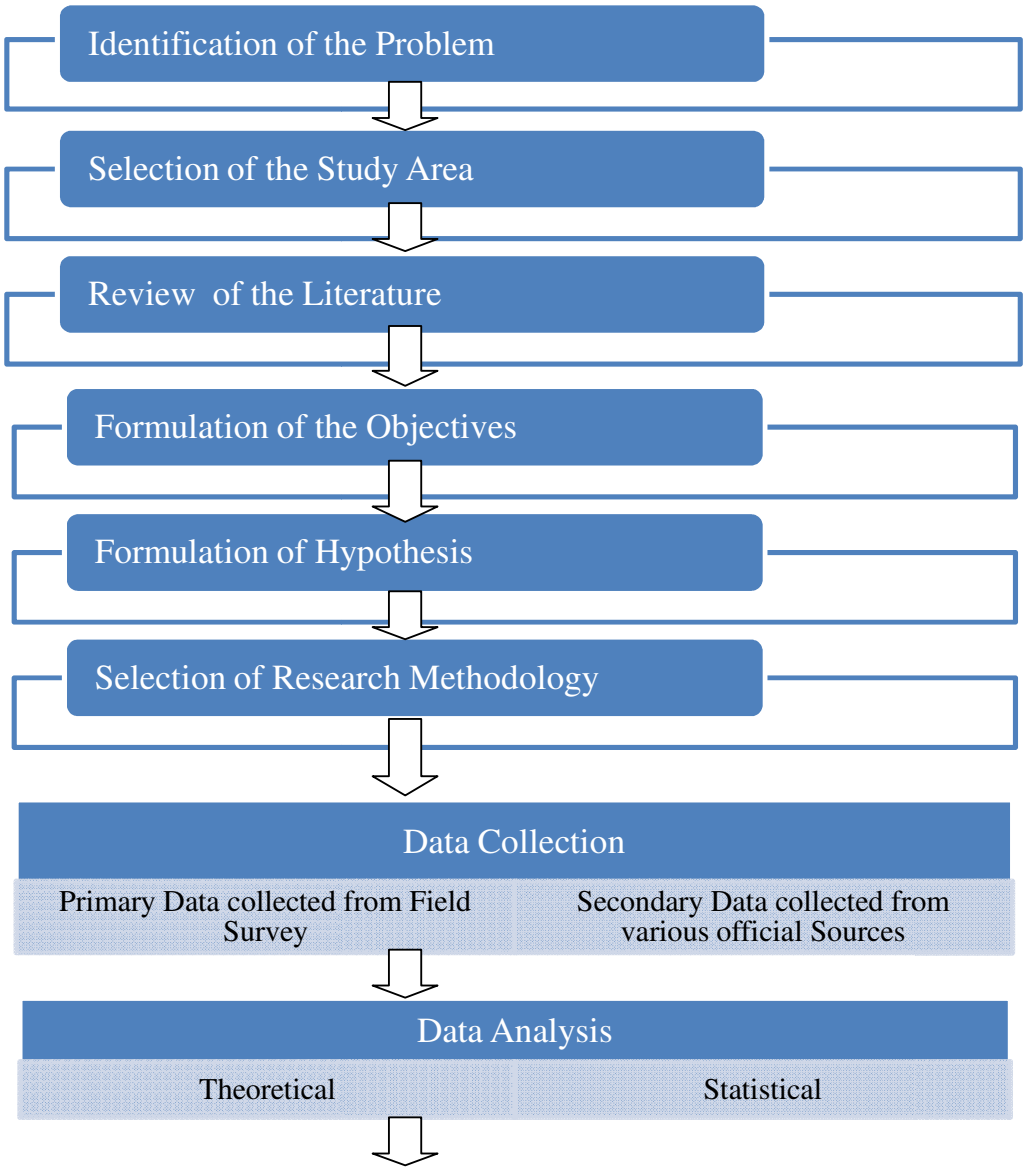
Time series data on population will be collected from the Census of Rajasthan (1991, 2001 and 2011). The study area has 60 wards that come under Kota Municipal Corporation and 50

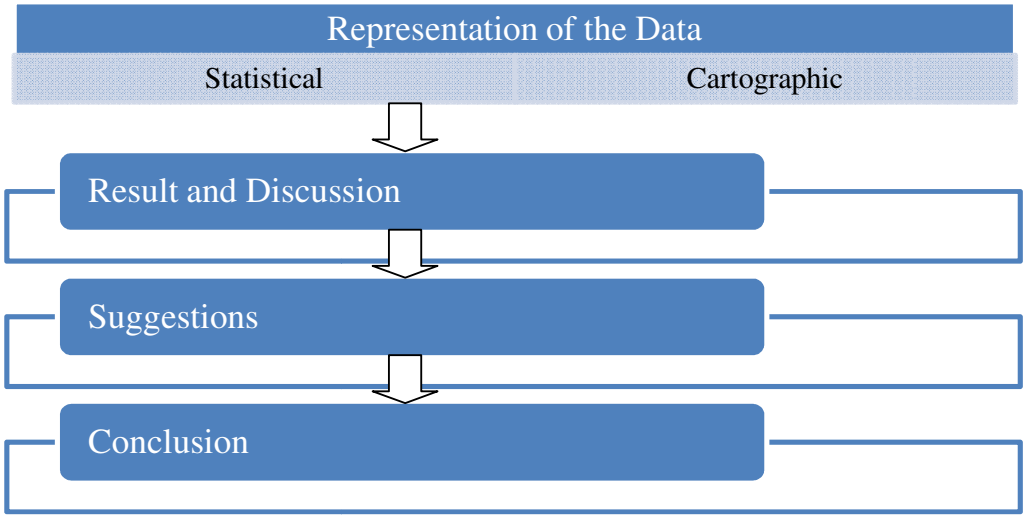
respondents will be selected for the survey from each ward with the help of random sampling method.

DATA ANALYSIS

The data will be analysed using statistical techniques and cartographic technique and represented by various tables and graphs. Wherever necessary, the data will further be represented with the help of suitable charts and maps. A variety of statistical methods and quantitative techniques will be used to determine the relationship between various demographic characteristics and urbanisation. Case study will be conducted to understand the socio- economic structure of the area with the help of a well designed questionnaire. The interview method is being considered to help understand the minds of administrators who undertook the charge of formulating the planning system of the city.

PLAN OF WORK





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VIII. BIBLIOGRAPHY

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